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Eighteen medically diagnosed hyperactive boys, matched individually for age, sex, teacher defined ability, and school class, took part in a double blind, placebo controlled trial of the effects of Ritalin on social behavior as measured by global rating scales. Behavior ratings by parents and teachers improved significantly when Ss were given Ritalin. The Bristol Social Adjustment Guide was deemed superior to Conners' Abbreviated Teacher Rating Scale for clinical evaluation of treatment efficacy due to its bipolar rating of maladjustment, resistance to halo effects, and provision of a number of syndromes, including inconsequence and hostility, while showing drug sensitivity and very high correlations with Conners' scale. (Author)

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ASSESSING STIMULANT TREATMENT OF HYPERACTIVITY BY BRISTOL SOCIAL ADJUSTMENT GUIDES

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ABSTRACT

Eighteen medically diagnosed hyperactive boys, matched individually for age, sex, teacher-defined ability and school class, took part in a double blind, placebo controlled trial of the effects of Ritalin on social behaviour as measured by global rating scales. Behaviour ratings by parents and teachers improved significantly with Ritalin. The Bristol Social Adjustment Guide is deemed superior to Conners' Abbreviated Scale for clinical evaluation of treatment efficacy due to its bipolar rating of maladjustment, resistance to halo effects and provision of a number of syndromes including inconsequence and hostility while showing drug sensitivity and very high correlations with Conners' scale.

Assessing stimulant treatment of hyperactivity by Bristol Social Adjustment Guides

Although commentators differ in their assessment of the value of global behaviour ratings in the diagnosis and treatment of hyperactive children (Ross & Ross, 1976), research interest in such scales continues apace. While the scales of Conners (1969) and Davids (1971) are often employed to demonstrate treatment efficacy, attempts to develop and validate new instruments continue (Abikoff, Gittelman-Klein & Klein, 1977; Achenbach, 1978; Spring, Blunden, Greenberg & Yellin, 1977; Zukow, Zukow & Bentler, 1978) as do reports highlighting the value of existing scales (Campbell & Steinert, 1978; Forbes, 1978).

The present study evaluates the usefulness, for this purpose, of the Bristol Social Adjustment Guides (BSAG), an instrument developed in Britain (Stott, 1962), revised and re-normed in Canada (Stott & Marston, 1970) and subjected to recent supportive factor analytic studies in Britain (Ghodsian, 1977) and America (Hale, 1978). This literature is extended here by a comparison of the sensitivity to stimulant effects on hyperactivity of the BSAG and widely reported scales.

The BSAG allows a teacher to describe, in a multiple choice format, a child's behaviour and attitudes in 33 specific areas within seven overall categories: interaction with teacher, school work, games and play, attitudes to other children, personal ways, physique and school achievement. Ratings are key-scored and yield measures of emotional instability

associated with Under- and Over-reaction. The over-reaction score (OVRACT) consists of the core syndromes of Inconsequence (impulsiveness) and Hostility with the associated groupings of Peer-maladaptiveness and Non-syndromic over-reaction. The under-reaction score (UNRACT) consists of the core syndromes of Unforthcomingness (under-assertion), Withdrawal and Depression with the associated grouping of Non-syndromic Under-reaction.

In overview, the study was a double blind, placebo controlled clinical trial (without crossover) of the effects of methylphenidate hydrochloride (Ritalin®) on the social behaviour of hyperactive children and matched, but unmedicated, normal controls.

METHOD

A. Subject selection and grouping

The 18 male hyperactive subjects were referred by local paediatricians or psychologists. Referral criteria included a diagnosis of hyperactivity, an I.Q. of 70 or above and psycho-active medication planned or already in progress. All clinical referrals were seen by the same paediatrician who randomly assigned subjects to drug or placebo groups while leaving the groups matched for mean age of subjects and number of subjects with previous experience of stimulant medication.

Each hyperactive subject was matched with a normal child of the same age and sex, with comparable (teacher-defined) mental ability and in the same school class. The resulting four groups

of nine subjects each (1: hyperactive-Ritalin, 2: hyperactive-placebo, 3: controls for 1, 4: controls for 2) formed the basis for the "Medication" analyses.

A post-hoc "responders" group (n=7) was formed of those hyperactive subjects who displayed significant changes in rated social behaviour when they were placed on, or removed from, the prescription of Ritalin. A "non-responders" group (n=7) consisted of those hyperactive subjects whose social behaviour was not significantly affected by such changes in medication status. The control subjects who had been matched originally with the hyperactive-responders formed a third group, while the original matches for the hyperactive-non-responders formed the fourth group for the "Prediction" analyses.

B. Behavioural assessments

The behaviour of each subject was rated twice by his parents and teacher. Parents were instructed in the use of the Werry-Weiss-Peters Activity Scale (Werry, 1968) which is the scale in widest use for parental evaluation of treatment efficacy (Safer and Allen, 1976). Each child's teacher completed both the Conners' Abbreviated Teacher Rating Scale (Conners, 1969) and the Bristol Social Adjustment Guide No. 1 - The Child in School (Stott & Marston, 1970) before and at the end of the two week experimental trial.

RESULTS

On the initial ratings (the "prediction" analysis), the clinical subjects were seen by their teachers as more hyperactive than the controls using Conners' scale ($F[1,24]=49.07$, $p<.001$), as more inconsequential ($F[1,24]=27.85$, $p<.05$), as displaying more hostility ($F[1,24]=4.96$, $p<.05$) and thus as displaying more over-reaction on the BSAG ($F[1,24]=26.16$, $p<.001$). The parents of clinical subjects rated their sons as significantly more overactive than did the parents of controls ($F[1,24]=42.62$, $p<.001$). However, there were no initial behavioural differences between "responders" and "non-responders".

Analysis of variance of pre- and post-trial ratings using all five measures (the "Medication" analysis) revealed significant or marginally non-significant positive effects of Ritalin: Conners' scale ($F[1,32]=8.96$, $p<.01$), BSAG over-reaction score ($F[1,32]=6.33$, $p<.02$), BSAG inconsequence score ($F[1,32]=3.44$, $p<.07$), BSAG hostility score ($F[1,32]=5.84$, $p=.02$), Werry-Weiss-Peters scale ($F[1,32]=4.23$, $p<.05$).

These results, presented on Table I, demonstrate that those hyperactive children receiving Ritalin showed improved behaviour while those receiving the placebo did not improve and that the behaviour of the control subjects was stable and unremarkable.

It is noteworthy that on the initial ratings both hyperactive groups had mean scores above the cut-off for hyperactivity on Conners' scale (15), while on the second rating, the Ritalin

group mean was well below that level but the placebo group mean was still above it.

The correlations between the various ratings of the behaviour of all subjects, as reported on Table II, were all positive and, with one exception, significant. Since the BSAG Ovract score consists of the Inconsequence and Hostility syndrome scores plus scores for "non-syndromic over-reaction", the substantial intercorrelation is not surprising. As the W-W-P scale does not sample "hostile" behaviour, its low correlation with BSAG hostility scores is understandable. The large correlations between Conners' scale scores and BSAG Inconsequence and Hostility are particularly noteworthy.

DISCUSSION

The study supports the value of the particular instruments employed in making global assessments of drug response. The diagnostic value of the 50% cut-off score of Conners' scale was clearly evident. However, this scale has disadvantages which it does not share with the Bristol Social Adjustment Guides. As Ross and Ross (1976) note, both the items and response choices are open to criticism. A more telling clinical disadvantage stems from its unipolar nature; Conners' scale allows ratings in only one direction of maladjustment. In the present study, one boy, who had initially been included in the series, had been receiving Ritalin (as well as a sleeping preparation on prescription of another physician), but was

assigned to the placebo group. He spent the first week of the trial under his desk, refusing to work. This disturbed behaviour, probably due to over-sedation, was picked up by the BSAG (as heightened Depression) but not by the Conners scale.

In the BSAG, behaviours are described more explicitly and in a wider variety of situations. Key-scoring undoubtedly renders it less "transparent" to the rater and thus less susceptible to halo effects (Whalen & Henker, 1976). Beyond its demonstrated utility in evaluating treatment, the provision of separate norms and scales for a number of syndromes of maladjustment would appear to render the BSAG not only more amenable to external validation, but also a more useful and flexible clinical instrument for this form of assessment.

Table I. Mean behaviour ratings for experimental groups, pre- and post-trial.

		Conners	OVRACT	Q	H	W-W-P
HA-Ritalin	PRE	15.44	15.33	8.56	2.44	0.67
	POST	9.67	8.78	5.33	1.00	0.53
HA-Placebo	PRE	16.56	16.44	9.44	2.33	0.40
	POST	19.33	17.89	10.44	2.89	0.42
Control- "Ritalin"	PRE	3.00	2.33	0.56	1.00	0.13
	POST	3.11	2.56	1.22	0.56	0.14
Control- "Placebo"	PRE	2.22	1.11	0.44	0.33	0.13
	POST	2.33	1.22	0.56	0.33	0.12

Bristol Social Adjustment Guides - School:

"OVRACT"....over-reaction total score

"Q".....inconsequence syndrome score

"H".....hostility syndrome score

Werry-Weiss-Peters Parents Rating Scale:

"W-W-P".....rating proportions

Table II. Correlation matrices for behaviour ratings, pre- and post-trial.

PRE-TRIAL

	Conners	OVRACT	Q	H	W-W-P
Conners		.912	.937	.582	.688
OVRACT			.927	.789	.641
Q				.595	.646
H					.310 (p=.033)

POST-TRIAL

	Conners	OVRACT	Q	H	W-W-P
Conners		.914	.889	.733	.546
OVRACT			.945	.869	.433 (p=.004)
Q				.710	.476 (p=.002)
H					.215 (p=.104)

(Unless indicated, correlation coefficients are significant at or beyond the p=.001 level.)

Bristol Social Adjustment Guides - School:

"OVRACT".....over-reaction total score

"Q".....inconsequence syndrome score

"H".....hostility syndrome score

Werry-Weiss-Peters Parents Rating Scale

"W-W-P".....ratings proportions score

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